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## PART I - ADMINISTRATIVE

### Section 1. General administrative information

**Title of project**

Northeast Oregon Hatcheries Planning And Implementation - Odfw

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**BPA project number:** 8805305

**Contract renewal date (mm/yyyy):** 4/2000

☐ **Multiple actions?**

**Business name of agency, institution or organization requesting funding**

Oregon Department of Fish and Wildlife

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**Business acronym (if appropriate)** ODFW

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**Proposal contact person or principal investigator:**

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**NPPC Program Measure Number(s) which this project addresses**

7.2, 7.4L

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**FWS/NMFS Biological Opinion Number(s) which this project addresses**

95-98 Hatchery Operations in the Columbia River Basin, Consultation No.383; ESA Sec. 10 Permits 847-Imnaha Spring Chinook and 1011-Grande Ronde Spring Chinook

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**Other planning document references**

Chapter 7, Snake River Salmon Recovery Plan - August 8, 1997 Draft; Volume 2, Grande Ronde and Imnaha sections of Wy Kan Ush Me Wa Kush Wit

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**Short description**

Work with comanagers to develop endemic broodstocks for supplementation of spring chinook salmon in the Grande Ronde basin and continue planning for additional anadromous salmonid enhancement programs in the Grande Ronde, Imnaha, and WallaWalla basins.

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**Target species**

Spring Chinook, Fall Chinook, Steelhead, Coho

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### Section 2. Sorting and evaluation

**Subbasin**

Lower Snake - Grande Ronde, Imnaha; Lower Mid-Columbia - WallaWalla

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### Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input checked="" type="checkbox"/> Anadromous fish <input type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input checked="" type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input checked="" type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

### Section 3. Relationships to other Bonneville projects

***Umbrella / sub-proposal relationships.*** List umbrella project first.

Project #	Project title/description
20512	Grande Ronde River Subbasin
8805305	Northeast Oregon Hatcheries Planning and Implementation - ODFW
9202604	Spring Chinook Salmon Early Life History Evaluation
9405400	Bull Trout Genetics, Habitat Needs, Life History, etc.
9801001	Grande Ronde Basin Spring Chinook Captive Broodstock Program
8402500	Protect and Enhance Fish Habitat in Grande Ronde Basin Streams

### ***Other dependent or critically-related projects***

Project #	Project title/description	Nature of relationship
8805301	Northeast Oregon Hatchery Master Plan, NPT	Cooperative Project
8805302	Plan, Site, Design & Construct NEOH Hatchery, CTUIR	Cooperative Project
9800702	Grande Ronde Supplementation - O&M/M&E, NPT	Implementation of GRESP
9800703	Conduct Satellite Facility O&M and Program M&E for GRESP, CTUIR	Implementation of GRESP
9801006	Captive Broodstock Artificial Propagation, NPT	Implementation of GRESP
9600800	PATH/ELH	Provide information for M&E
9202601	Grande Ronde Model Watershed - Project Planning Support	
9402700	Grande Ronde Model Watershed Habitat Projects	
8909600	Genetics of Snake River Salmon and Steelhead, NMFS	Genetics monitoring for GRESP and information needed for steelhead planning. Comanagers of GRESP will collect samples during field activities

### Section 4. Objectives, tasks and schedules

#### ***Past accomplishments***

Year	Accomplishment	Met biological objectives?
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1997	Comanagers installed temporary adult collection facilities in upper Grande Ronde River, Catherine Creek, and Lostine River and began collecting adult chinook. ODFW spawned and reared progeny of adults collected from Lostine River.	Objective was to begin development of endemic broodstocks for all three basins but too few adults were collected from upper Grande Ronde and Catherine Creek.
1998	Completed long-term management plan for Grande Ronde endemic spring chinook program and applied for modification of ESA Section 10 Permit No. 1011. Plan was developed cooperatively with NPT, CTUIR, and USFWS.	
1998	Completed designs for new adult collection and juvenile acclimation facilities in upper Grande Ronde River, Catherine Creek, and Lostine River. Received approval to begin construction, secured landowner agreements, and will begin construction in winter.	
1998	Comanagers operated temporary adult collection facilities in upper Grande Ronde River, Catherine Creek, and Lostine River.	Too few adult chinook were collected for spawning. Adults were returned to spawn naturally.
1998	Completed a long-term management plan for research and enhancement of Imnaha River chinook and applied for new ESA Section 10 Permit. The plan was developed cooperatively with NPT and USFWS.	
1998	Reviewed drafts of master plan documents prepared by or for NPT and provided comments to NPT. Wrote a captive broodstock alternative and submitted it to NPT for inclusion in Imnaha master plan.	

### ***Objectives and tasks***

<b>Obj 1,2,3</b>	<b>Objective</b>	<b>Task a,b,c</b>	<b>Task</b>
1	Provide timely and effective input to NPT and CTUIR on development of Master Plans for enhancement of anadromous salmonids in the Imnaha, Grande Ronde and Walla Walla Basins.	a	Provide timely responses to requests for review of draft Master Plan documents.
		b	Assist with preparation of Master Plans.
		c	Continue cooperating with tribal and federal comanagers to develop management strategies for recovery and enhancement of anadromous salmonids in target basins.
2	Begin planning for conversion to endemic summer steelhead broodstocks for hatchery programs in the Grande Ronde basin.	a	Review available information on escapement, distribution, stock structure, and genetics of Grande Ronde basin summer steelhead.
		b	Coordinate with NPT, CTUIR, USFWS, NMFS, and WDFW to develop strategies for managing an endemic summer steelhead program in the Grande Ronde basin.
		c	Conduct a review of existing and needed facilities for endemic summer steelhead

			program in the Grande Ronde basin.
3	Develop annual operating plans for implementation of the conventional component of the Grande Ronde Basin Endemic Spring Chinook Supplementation Program (GRESB)	a	Coordinate with NPT, CTUIR, and USFWS to develop annual plans for the operation of the program.
4	Develop endemic broodstocks to reduce the decline and contribute to recovery Grande Ronde basin spring chinook by coordinating with NPT, CTUIR, and USFWS to implement the conventional component of GRESB.	a	Safely transport spring chinook salmon adults to Lookingglass Hatchery from trapping sites on the upper Grande Ronde River, Catherine Creek, and Lostine River. Adult collection facilities are operated by NPT (Lostine) and CTUIR (UGR and CC).
		b	Spawn endemic spring chinook adults at Lookingglass Hatchery keeping adults from each subbasin separate.
		c	Rear progeny of endemic chinook adults to pre-smolt stage at Lookingglass Hatchery
		d	Safely transport pre-smolt chinook juveniles from Lookingglass Hatchery to acclimation facilities on their parent streams. Acclimation facilities are operated by comanagers from NPT (Lostine R.) and CTUIR (upper Grande Ronde R. and Catherine Cr.).
5	Evaluate the success of the Grande Ronde Endemic Spring Chinook Supplementation Program	a	Compare performance of natural, conventional hatchery, and captive broodstock components of the program by comparisons of progeny-to-parent ratios, survival rates among life stages, and survival to mainstem dams.
		b	Utilize data collected from other projects (eg. Early Life History Study) for evaluations of program success.
		c	Conduct multiple spawning surveys in supplemented and non-supplemented streams in the basin to evaluate: effects of the program on spawner distribution, survival, and behavior; contribution of hatchery adults to spawning; and, progeny-to-parent ratios.
		d	Monitor genetic and life history characteristics of supplemented and non-supplemented populations in the basin and hatchery and natural chinook in supplemented sub-basins.
6	Monitor fish health at all stages in the Grande Ronde Endemic Spring Chinook Supplementation Program.	a	Monitor adult mortalities and spawned adults for presence of viral, bacterial, fungal, and parasitic agents.
		b	Conduct monthly monitoring of hatchery reared juveniles to assess presence of viral, bacterial, fungal, and parasitic agents.
		c	Conduct examinations at all life stages when unusual loss occurs to determine cause of loss and recommend preventative and therapeutic treatment.

### **Objective schedules and costs**

<b>Obj #</b>	<b>Start date mm/yyyy</b>	<b>End date mm/yyyy</b>	<b>Measureable biological objective(s)</b>	<b>Milestone</b>	<b>FY2000 Cost %</b>
1	4/2000	3/2001		Completion of Master Plans	10.00%
2	4/2000	3/2001		Completion of plan and facilities review for endemic steelhead	15.00%
3	4/2000	3/2001			5.00%
4	4/2000	3/2001	Release juvenile progeny of endemic broodstock		50.00%
5	4/2000	3/2001			15.00%
6	4/2000	3/2001			5.00%
				<b>Total</b>	100.00%

#### **Schedule constraints**

None

#### **Completion date**

Until Snake River anadromous salmonids are de-listed.

## **Section 5. Budget**

**FY99 project budget (BPA obligated):** \$300,740

### **FY2000 budget by line item**

<b>Item</b>	<b>Note</b>	<b>% of total</b>	<b>FY2000</b>
Personnel	Approximately 4 FTE	%16	106,923
Fringe benefits	36% for permanents, 45% for seasonals	%7	44,973
Supplies, materials, non- expendable property		%9	61,220
Operations & maintenance		%9	56,600
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Facility improvements at Lookingglass Hatchery to accommodate GRESP	%23	152,000
NEPA costs		%0	
Construction-related support		%0	
PIT tags	# of tags:	%0	
Travel		%3	21,400
Indirect costs	35.5%	%24	157,306
Subcontractor	Steelhead facility review	%9	60,000
Other		%0	
<b>TOTAL BPA FY2000 BUDGET REQUEST</b>			<b>\$660,422</b>

### Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
Lower Snake River Compensation Plan	Funding for base program in Grande Ronde and Imnaha basins	%67	1,500,000
ODFW	District biologists' participation in planning and implementation	%3	70,000
		%0	
		%0	
<b>Total project cost (including BPA portion)</b>			<b>\$2,230,422</b>

### Outyear costs

	FY2001	FY02	FY03	FY04
<b>Total budget</b>	\$600,000	\$600,000	\$400,000	\$400,000

## Section 6. References

Watershed?	Reference
<input type="checkbox"/>	CRITFC (Columbia River Intertribal Fish Commission). 1996. Wy-Kan-Ush-Mi Wa-Kish-Wit: Spirit of the Salmon. The Columbia River anadromous fish restoration plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes. Vols. I and II. Portland, Oregon
<input type="checkbox"/>	Currens, K., J. Lannan, B. Riddell, D. Tave, and C. Wood. 1996. Responses of the independent scientific panel to questions about the interpretation of genetic data for spring chinook salmon in the Grande Ronde basin. US v. OR Dispute Resolution, 1996.
<input type="checkbox"/>	Herrig, D. 1998. Lower Snake River Compensation Plan Background. pages 14-19 in: Lower Snake River Compensation Plan Status Review Symposium. US Fish and Wildlife Service, Boise, Idaho.
<input type="checkbox"/>	Maynard, D.J., T.A. Flagg, and C.V.W. Mahnken (editors). 1996. Development of a natural rearing system to improve supplemental fish quality, 1991-1995. Report to Bonneville Power Administration, Contract DE-AI79-91BP20651, 231p.
<input type="checkbox"/>	Nehlsen, W.J., J.E. Williams, and J.A. Lichatowich. 1991. Pacific salmon at the crossroads: stocks at risk from California, Oregon, Idaho, and Washington. Fisheries 16(2):4-21.
<input type="checkbox"/>	NMFS (National Marine Fisheries Service) 1997. Snake River Salmon Recovery Plan, August 8, 1997 Draft. National Marine Fisheries Service, Portland, Oregon.
<input type="checkbox"/>	NPPC (Northwest Power Planning Council) 1987. 1987 Columbia River Basin Fish and Wildlife Program. NPPC, Portland, Oregon.
<input type="checkbox"/>	NPPC (Northwest Power Planning Council) 1994. 1994 Columbia River Basin Fish and Wildlife Program. NPPC, Portland, Oregon.
<input type="checkbox"/>	ODFW (Oregon Department of Fish and Wildlife) 1996. Application For An Emergency Permit For Scientific Purposes And To Enhance The Propagation Or Survival Of Endangered Grande Ronde River Basin Spring Chinook Salmon Under The ESA. ODFW, Portland, Oregon.
<input type="checkbox"/>	ODFW (Oregon Department of Fish and Wildlife) 1998a. Application For A Permit For Scientific Research And To Enhance The Propagation Or Survival Of Endangered Imnaha River Chinook Salmon Under The Endangered Species Act of 1973. ODFW, Portland, Oregon.
<input type="checkbox"/>	ODFW 1998b. Request For Modification Of Permit 1011 For Scientific Research And To Enhance The Propagation Or Survival Of Endangered Grande Ronde River Basin Spring Chinook Salmon Under The Endangered Species Act. ODFW, Portland, Oregon.

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## **PART II - NARRATIVE**

### **Section 7. Abstract**

This proposal covers Oregon Department of Fish and Wildlife participation in planning and implementation of Northeast Oregon Hatcheries (NEOH) program. NEOH was initially included in the NPPC Fish and Wildlife Program to fund additional facilities and production for anadromous salmonids in northeast Oregon streams to contribute to the doubling goal for the Columbia River basin. Since the listing of Snake River chinook there has been greater emphasis on the use of hatchery production of endemic stocks, and associated facility needs, to assist in conservation and recovery of listed species. Planning and implementation of NEOH activities are accomplished cooperatively among ODFW, Washington Department of Fish and Wildlife (WDFW), USFWS, Nez Perce Tribe (NPT), and Confederated Tribes of the Umatilla Indian Reservation (CTUIR) in the Grande Ronde basin, ODFW, USFWS, and NPT in the Imnaha basin, and ODFW, WDFW, and CTUIR in the Walla Walla basin.

The planning component of this proposal covers development of production programs and facility designs to assist in recovery of spring chinook salmon in the Grande Ronde and Imnaha basins and summer steelhead in the Grande Ronde and Walla Walla basins. Planning may also cover actions for steelhead in the Imnaha basin and reestablishment of coho and sockeye salmon in the Grande Ronde and spring chinook salmon in the Walla Walla. ODFW is a cooperator in the development of Master Plans for the three basins and NPT and CTUIR are leading the planning effort.

This proposal also covers ODFW's implementation of the conventional supplementation component of the Grande Ronde Endemic Spring Chinook Supplementation Program (GRESF). The program is a cooperative effort among ODFW, USFWS, NPT, and CTUIR to develop endemic broodstocks that may be used to increase numbers and contribute to recovery of Grande Ronde basin spring chinook salmon. NPT is primarily responsible for developing and operating adult trapping and smolt acclimation facilities on the Lostine River. CTUIR is primarily responsible for developing and operating adult trapping and smolt acclimation facilities on upper Grande Ronde River and Catherine Creek. ODFW is primarily responsible for transportation, spawning, rearing, and pathology activities. All comanagers cooperate to develop annual operating plans and conduct monitoring and evaluation activities.

### **Section 8. Project description**

#### **a. Technical and/or scientific background**

Anadromous salmonid production in northeast Oregon has declined significantly in the past three decades. In the Snake River basin in Oregon, anadromous salmonids have been eliminated from areas above Hells Canyon Dam. In areas of the Snake River basin that remain accessible to anadromous salmonids, spring/summer and fall chinook salmon and summer steelhead are listed as threatened under the federal Endangered Species Act (ESA). Coho and sockeye salmon are extinct in the Snake River basin in Oregon and spring chinook salmon are extinct in the Walla Walla basin (Nehlsen et al. 1991).

The Lower Snake River Compensation Plan (LSRCP) was authorized by Congress in 1976 to mitigate for losses of chinook salmon and steelhead resulting from construction of dams in the lower Snake River (Herrig 1998). Hatchery and satellite facilities were developed under LSRCP to provide "in-kind, in-place" mitigation for lost chinook and steelhead production. The program is administered by US Fish and Wildlife Service (USFWS) and was expected to provide adult returns for sport and tribal harvest, hatchery broodstocks, and supplementation of natural production. LSRCP has provided harvestable returns of adult hatchery steelhead, but has not met expectations for adult chinook returns or enhancement of natural production of chinook or steelhead (Herrig 1998).

Northeast Oregon Hatcheries (NEOH) program was included in the 1987 amendment to the Columbia River Basin Fish and Wildlife Program, Section 700, to provide additional hatchery facilities and contribute

to NPPC's doubling goal for adult returns to the Columbia River Basin (NPPC 1987). NEOH focuses on spring chinook production in the Hood, Walla Walla, Grande Ronde and Imnaha basins but is not strictly limited to spring chinook. It calls for development of master plans to outline construction, operation, and management of additional production and release facilities to supplement natural production in the target basins. Plans are to be developed cooperatively by fish and wildlife agencies and tribes.

LSRCP and NEOH programs have been undergoing many changes since their inception. ESA listings, continued declines in natural production, poor performance of hatchery programs (especially for spring chinook), and increasing concerns about hatchery/wild interactions have contributed to changes in hatchery mitigation programs. Although agencies and tribes are continuing to pursue mitigation goals in the long-term, we are placing increasing short-term emphasis on use of hatcheries for conservation and recovery of ESA listed species.

The spring chinook salmon program in the Grande Ronde basin reflects the shift in emphasis from a numerically driven mitigation program to a conservation and recovery program. The LSRCP program in the Grande Ronde basin began in the early 1980's and used non-endemic stocks of hatchery spring chinook for mitigation and supplementation of natural production. Concerns about the potential effects of interactions between non-endemic hatchery chinook and naturally produced chinook in the basin led to a dispute among comanagers about the use of Rapid River stock for supplementation. An independent scientific panel (ISP) was convened under US v. OR as part of a dispute resolution over the use of Rapid River spring chinook for supplementation. As a result of recommendations from the ISP (Currens et al. 1996) and negotiations among comanagers, we began a program to develop endemic spring chinook broodstocks from the upper Grande Ronde River, Catherine Creek, and Lostine River. The program, Grande Ronde Endemic Supplementation Program (GRESPP), has captive broodstock and conventional supplementation components. Collections of juveniles for the captive component of the program began as an emergency measure in 1995 and continued under a plan described in the ESA Section 10 application for the captive broodstock program (ODFW 1996). Collection of adults for the conventional component began in 1997. The shift from one non-endemic stock to three endemic stocks requires additional facilities for adult collection, smolt acclimation, and for managing the three stocks at Lookingglass Hatchery. Funding from NEOH has allowed for the planning, construction, and operation of the additional adult collection and smolt acclimation facilities. Comanagers have contracted Montgomery-Watson to conduct a review of available facilities at Lookingglass Hatchery and additional facilities needed to implement spring chinook programs in the Grande Ronde and Imnaha basins.

We are beginning a process to develop endemic summer steelhead broodstocks for mitigation and enhancement programs in the Grande Ronde basin. We are currently using a Snake River conglomerate stock (Wallowa stock) for LSRCP programs in the basin. The LSRCP steelhead programs in Oregon and Washington portions of the Grande Ronde basin have been successful in reestablishing sport and tribal fisheries but natural production continues to decline (Herrig 1998). Concerns are increasing about the potential of stray Wallowa stock steelhead adults interacting with natural spawners in the basin and the suitability of Wallowa stock for supplementation of natural production. Comanagers of the Grande Ronde basin will be developing strategies for converting programs to endemic broodstocks. This effort will require a thorough review of available information on steelhead status and stock structure in the basin as well as a review of existing and needed facilities for an endemic steelhead program.

This proposal is for Oregon Department of Fish and Wildlife's (ODFW) contribution to planning and implementation of production and facilities to assist in recovery of spring chinook salmon in the Grande Ronde and Imnaha basins and summer steelhead in the Grande Ronde and Walla Walla basins. Planning may also cover actions for steelhead in the Imnaha basin and reestablishment of coho and sockeye salmon in the Grande Ronde and spring chinook salmon in the Walla Walla. Implementation of the conventional component of the GRESPP is also covered in this proposal. All activities require cooperation with tribal comanagers. Planning and implementation of NEOH activities are accomplished cooperatively among ODFW, Washington Department of Fish and Wildlife (WDFW), USFWS, Nez Perce Tribe (NPT), and Confederated Tribes of the Umatilla Indian Reservation (CTUIR) in the Grande Ronde basin, ODFW, USFWS, and NPT in the Imnaha basin, and ODFW, WDFW, and CTUIR in the Walla Walla basin. The Hood River component of NEOH is now covered under separate proposals.



**b. Rationale and significance to Regional Programs**

The Northwest Power Planning Council's Fish and Wildlife Program (NPPC 1994) Measure 7.4L calls for agencies and tribes to develop master plans for additional supplementation of anadromous salmonid populations in the Imnaha, Grande Ronde, and Walla Walla basins. The measure also calls for Bonneville to fund design, construction, operation, maintenance, monitoring, and evaluation of the new facilities. Measure 7.2 states that actions should be taken to rebuild weak wild and naturally spawning populations as quickly as possible, including the proper use of artificial production to prevent extinction and further loss of genetic diversity.

The Draft Snake River Salmon Recovery Plan (NMFS 1997) lists several objectives for the use of artificial propagation to assist recovery of spring chinook salmon in the Grande Ronde basin including:

1. Maintain three artificial reserves founded from the Lostine River, Catherine Creek, and the upper Grande Ronde River subbasins, alongside the natural spawning populations;
2. Increase the numbers of naturally produced fish in each of the target populations using their own artificial reserves as donors;
3. Reintroduce spring chinook salmon into areas within the Grande Ronde basin where the species has become extinct or is likely to become extinct in the near future. Appropriate donor stock(s) may be determined by the availability of individuals from the three artificial reserves, release location, and potential for straying into natural populations; and,
4. Manage the Minam and Wenaha populations as wild reserves.

The ISP, convened as part of the US v. OR dispute resolution for management of spring chinook salmon in the Grande Ronde basin, recommended that development of local broodstocks begin immediately in the basin to reduce demographic risk to the populations. They suggested combining a conventional supplementation program with captive broodstock approaches because of the experimental nature of captive broodstock programs (Currens et. al. 1996).

Mitigation and production goals, for Grande Ronde basin spring chinook salmon, stated in the LSRCP and US v. OR Columbia River Fisheries Management Plan (CRFMP) are presently not achievable because sufficient adult salmon of appropriate origin are not available. We view initiation of captive broodstocks and conventional supplementation components of GRESP as essential initial steps towards developing broodstocks of appropriate origin. These broodstocks may then assist in meeting long-term mitigation, production, and harvest goals if survival improves. They will also assist in meeting risk containment guidelines outlined in the Draft Snake River Salmon Recovery Plan (NMFS 1997) and Oregon's Wild Fish Management Policy. Development of local broodstocks is essential for the continuation of spring chinook salmon artificial propagation programs in the Grande Ronde River basin.

**c. Relationships to other projects**

Development of master plans and other related planning activities for NEOH are a collaborative effort among ODFW, NPT (Imnaha and Grande Ronde), CTUIR (Grande Ronde and Walla Walla), and USFWS (LSRCP in Imnaha and Grande Ronde). Planning also involves ESA Section 7 consultation with NMFS and USFWS because of potential effects on listed species in target basins or the mainstem Snake and Columbia Rivers. In addition, some activities will require application for Section 10 permits for direct take of listed species. Other project proposals for NEOH planning activities include: 8805301 - NEOH Master Plan, NPT, and 8805302 - Plan, Site, Design & Construct NEOH Hatchery - Umatilla/Walla Walla Component, CTUIR.

Planning and implementation of GRESP is a coordinated effort among ODFW, NPT, CTUIR, and USFWS. All comanagers cooperated in the development of a long-term management plan included in ESA Section 10 Permit applications (ODFW 1996, 1998b).

The plan outlines measures to manage production from captive broodstock, conventional supplementation, and natural components to achieve our goals of increasing spring chinook abundance while minimizing changes in genetic and life history characteristics. Implementation of the conventional component of GRESP is also coordinated among the comanagers. NPT is primarily responsible for developing and operating adult trapping and smolt acclimation facilities on the Lostine River. CTUIR is primarily responsible for developing and operating adult trapping and smolt acclimation facilities on upper Grande Ronde River and Catherine Creek. ODFW is primarily responsible for transportation, spawning, rearing, and pathology activities. All comanagers will coordinate to develop annual operating plans and conduct monitoring and evaluation activities. Other project proposals that will interact or provide information for implementation of GRESP include planning projects listed above and: 9800702 - Grande Ronde Supplementation O&M/M&E, NPT Lostine; 9800703 - Conduct Satellite Facility O&M and Program M&E for Grande Ronde Spring Chinook, CTUIR; 9801001 - Grande Ronde Basin Spring Chinook Captive Broodstock Program, ODFW/NPT; 9801006 - Captive Broodstock Artificial Propagation, NPT; and, 9209604 - Early Life History of Spring Chinook Salmon in the Grande Ronde Basin, ODFW.

**d. Project history** (for ongoing projects)

ODFW's involvement in NEOH Master Planning began in 1989 under Project # 8805304 and included the Hood and Umatilla basins in addition to the Grande Ronde, Imnaha, and Walla Walla. The original intent of NEOH was to develop new hatchery facilities to contribute to NPPC's doubling goal for anadromous salmonids in the Columbia River basin. Planning for the Grande Ronde, Imnaha, and Walla Walla basins was temporarily shelved for the period of 1994-96 because of uncertainties about the implications of ESA listings in the Snake River on new hatchery production projects. Activities for the Hood and Umatilla basins continued under Hood River Production Program and Umatilla Hatchery Program. ODFW's participation in NEOH Master Planning for the Grande Ronde, Imnaha, and Walla Walla basins resumed in 1997, under Project # 8805305, with an increased emphasis on using new facilities to assist with recovery of ESA listed populations. Project # 8805305 also includes planning and implementation of the conventional supplementation component of GRESP.

Since 1997, we have provided written and verbal comments to NPT on several NEOH planning documents including sections of the Imnaha Master Plan and a feasibility study on the potential re-introduction of sockeye and coho salmon to the Grande Ronde basin. We have also coordinated with NPT, CTUIR, and USFWS on long-term management plans for management of spring chinook programs in the Imnaha and Grande Ronde basins. Both plans incorporate adaptive management approaches to supplementation of natural production with hatchery fish. We developed sliding scale management criteria to emphasize increasing numbers and minimizing demographic risk at low levels of abundance then reducing relative contribution of hatchery fish as abundance increases to minimize genetic risk. In the Grande Ronde, there are additional management criteria for balancing the contribution of natural, captive broodstock, and conventional hatchery production. The plans were incorporated into ESA Section 10 Permit applications and submitted to NMFS (ODFW 1998a and 1998b).

Implementation of the conventional hatchery component of GRESP began in 1997 when temporary adult collection facilities were installed in upper Grande Ronde, Catherine Creek, and Lostine River. We worked closely with NPT and CTUIR on the operation of the program in 1997 and 1998. The comanagers had hoped to collect enough adult spring chinook to begin developing endemic broodstocks from all three streams in 1997, however, we only spawned adults from the Lostine River. The same facilities were operated in 1998 but too few adults were collected for spawning and they were returned to their native streams to spawn naturally.

Planning and design work for permanent adult collection and smolt acclimation facilities also began in 1997 and continued in 1998. Construction is expected to be completed in 1999. These facilities will be essential to the implementation and evaluation of both captive and conventional components of GRESP. We again have worked closely with tribal comanagers, BPA, and contractors on siting, design details, and NEPA documents associated with the permanent facilities.

Past budgets for Project # 8805305 have been 298k in 1997, 302k in 1998, and 215k in 1999.

**e. Proposal objectives**

ODFW is one entity involved with planning and implementation of NEOH. The ultimate objectives of the program are to recover and enhance anadromous salmonid populations in northeast Oregon streams, specifically the Grande Ronde, Imnaha, and Walla Walla Rivers. Objectives 1 and 2 relate to the planning aspects of NEOH while objectives 3-6 relate to ODFW's participation in the implementation of the conventional component of GRESP. We do not have specific numerical objectives for GRESP because hatchery production will depend numbers of naturally produced adults trapped and there are many uncertainties about potential success of the captive broodstock and conventional supplementation components of the program.

Objectives:

1. Provide timely and effective input to NPT and CTUIR on development of Master Plans for enhancement of anadromous salmonids in the Grande Ronde, Imnaha, and Walla Walla basins.
2. Begin planning for conversion to endemic summer steelhead broodstocks for hatchery programs in the Grande Ronde basin. This will include a review of existing and needed facilities (similar to on-going work for chinook at Lookingglass Hatchery).
3. Develop annual operating plans for implementation of the conventional component of the Grande Ronde Basin Endemic Spring Chinook Supplementation Program (GRESPP).
4. Develop endemic broodstocks to reduce the decline and contribute to recovery Grande Ronde basin spring chinook by coordinating with NPT, CTUIR, and USFWS to implement the conventional component of GRESP as outlined in the 1998 request for modification of Section 10 Permit 1011 and annual operating plans.
5. Evaluate the success of the Grande Ronde Endemic Spring Chinook Supplementation Program.
6. Monitor fish health at all stages in the Grande Ronde Endemic Spring Chinook Supplementation Program.

**f. Methods**

Objective 1 will be accomplished by providing written and verbal input on Master Planning documents to NPT and CTUIR. We may also prepare sections of Master Plans if requested. ODFW will continue to participate in periodic NEOH coordination meetings with tribal comanagers to develop management strategies and try to resolve policy conflicts. These activities will involve District, Region (Northeast), and Fish Division personnel of ODFW.

Objective 2 will require a review of all available information on summer steelhead escapement, distribution, stock structure, and genetics in the Grande Ronde basin. We will also need to develop management strategies for an endemic summer steelhead program among all of the comanagers of the Grande Ronde basin including NPT, CTUIR, USFWS, NMFS, and WDFW. This effort will also include a review of available facilities and additional facility needs for steelhead. This will be similar to the ongoing review of Lookingglass Hatchery and facilities needed for the Grande Ronde and Imnaha spring chinook programs.

Objectives 3-6 relate to implementation of the conventional supplementation component of GRESP. The broodstock collection guidelines, monitoring and evaluation program, fish health monitoring, and other activities associated with this program are described in detail in the application for of ESA Section 10

Permit 1011 (ODFW 1996) and the application for a permit modification submitted to NMFS in 1998 (ODFW 1998b). Annual operating plans (AOP's) for the program will be developed and coordinated with AOP's for LSRCP and captive broodstock programs. The AOP's are developed cooperatively by ODFW, NPT, CTUIR, and USFWS.

Implementation of the program also requires coordination among the comanagers. NPT and CTUIR are responsible for operation of adult chinook trapping facilities and smolt acclimation facilities on the Lostine River (NPT), upper Grande Ronde River (CTUIR), and Catherine Creek (CTUIR). There is daily communication between tribal personnel at trapping facilities and fish transportation personnel of ODFW. ODFW will transport adult chinook from the trapping facilities to Lookingglass Hatchery in trucks equipped with oxygen supplementation systems, water circulation systems, and radios or cell phones for communication. The adults will be held in circular tanks at Lookingglass until spawning. If too few adults are collected, as was the case in 1998, they will be returned to their stream of origin and we will rely on the captive component of the GRESP to provide smolts for that brood year.

ODFW will be responsible for spawning chinook adults and rearing their progeny at Lookingglass Hatchery. Standard spawning, incubation, and sanitation practices will be used to minimize mortality. In addition, we plan to begin NATURES rearing of juveniles to improve smolt survival (Maynard et al. 1996). Juveniles will be marked with adipose fin clips and coded-wire tags prior to release. In addition some juveniles may receive PIT tags for smolt monitoring and evaluation of hatchery smolt survival under the PATH study. ODFW will transport pre-smolt juveniles to acclimation facilities, operated by tribal comanagers, on their parent streams in early spring of their second year.

Monitoring and evaluation of the conventional component of GRESP will be accomplished cooperatively among all comanagers of the program. We will operate under an adaptive management philosophy and will rely on new information, generated either within or outside of the program, for making future decisions and adapting the program to meet our goals and objectives. Monitoring and evaluation will include assessment of fish culture practices, assessment of natural and hatchery performance, life history and population attributes, and genetics monitoring. Information on timing, distribution, and abundance of natural spawning, and abundance and movements of natural and hatchery juveniles will be collected in the study of early life history of spring chinook salmon in the Grande Ronde basin, Project # 9202604.

Fish health monitoring will be done by ODFW Fish Pathology staff and will include assessments of viral, bacterial, fungal, and parasitic agents at all life stages of chinook used in the program. Pathologists will also conduct examinations of all life stages when unusual loss or symptoms of disease problems occur and recommend preventative or therapeutic treatment.

#### **g. Facilities and equipment**

##### Office Facilities

Adequate office facilities are available in LaGrande, Enterprise, and Pendleton for ODFW's participation in the planning components of the program. Offices are equipped with telephones, computers and E-mail, FAX machines, etc. to allow effective communication with comanagers. Vehicles are also available for travel to meetings, field sites, etc.

##### Lookingglass Hatchery

- All permanent facilities, utilities, and maintenance at Lookingglass Hatchery
- Adult holding will be in three 20 ft. diameter circular tanks, 5 ft. deep, with Lookingglass Creek water supplied at 170 gpm.
- 120 Heath tray incubators
- Three chillers for water temperature control
- Twenty-two Canadian troughs for early rearing
- Six 10'x100'x4' concrete raceways with Lookingglass Creek water at 850 gpm
- Pathogen-free well water supply for incubation
- Water temperature monitoring system including an integrated SCADA system

- Diesel powered emergency electrical backup system

### Fish Transport Units

Adults will be transported in the following units:

- Fiberglass, 250 gallon, insulated, pick-up mounted tank, capacity 15 adult chinook
- Fiberglass, 550 gallon, insulated, flatbed mounted tank, capacity 30 adult chinook

Above units are equipped with oxygen diffusion systems, water circulation/aeration systems, loss of power warning systems (for water circulation), 12-inch outlets, release troughs, cab-installed communication system, and thermometers.

Transport tanks that would be used to haul smolts resulting from this program would vary with the pounds of production. Likely scenarios would be as follows:

<u>Pounds of Fish</u>	<u>Transport Tank Description</u>
0-500 lbs.	250 gal. - 550 gal. tanks
501-2500 lbs.	550 gal. tanks – 2800 gal. tankers
2501 and up	2,000 gal. – 5,000 gal. tankers

All of the above tankers are equipped as follows:

- Insulated
- Minimum 6" outlets
- Aerator systems
- Oxygen diffuser systems
- Temperature monitoring systems
- Dissolved oxygen monitoring systems (2000 gal. tankers and up)

### Pathology

A fully equipped fish pathology laboratory at Eastern Oregon University in LaGrande.

## **h. Budget**

Personnel costs include oversight of planning efforts and implementation of transportation, production, monitoring, and fish health components of GRESP. Supplies and O&M expenses are also for implementation of GRESP. Capital costs are for additional facilities we expect will be needed, and identified in ongoing review of Lookingglass Hatchery, to accommodate production and fish health management of endemic broodstocks. Indirect rate is based on agreement between ODFW and the Federal Government. Subcontractor costs are for a steelhead facility review to facilitate conversion to endemic broodstocks.

## **Section 9. Key personnel**

### **Bruce R. Eddy, Assistant Regional Supervisor, 0.25 FTE**

**Education:** B.S., Natural Resource Management, California Polytechnic State University, at San Luis Obispo, 1975

**Certification:** Certified Fisheries Scientist, American Fisheries Society

**Current Employment:** Assistant Regional Supervisor for Fish Management, Oregon Department of Fish and Wildlife, Northeast Region, LaGrande, 1994 to present. Responsible for oversight and supervision of fish management, habitat, and production programs in Wallowa, Union, Grant, and Umatilla Counties, Oregon. Directly supervises 16 permanent fisheries biologists and managers. Represents Northeast Region ODFW in various regional forums including US v. OR.

**Past Employment:** 1982-1994 – Principal scientist, PacifiCorp. Responsible for all fisheries-related activities associated with company facilities including supervision of six hatcheries, directing research in a number of basins in Oregon, Washington, Utah, and Montana. Also responsible for developing major

licensing documents and negotiating mitigation agreements. Supervised 20 permanent and seasonal employees.  
1978-1982 – Intermediate Scientist, Beak Consultants Inc. Responsible for design and implementation of a variety of aquatic studies for industry and government. Supervised 5 technicians.

### **Robert J. Lund, Lookingglass Hatchery Manager, 0.1 FTE**

**Education:** A.A.S., Fisheries, Peninsula College, Port Angeles, WA, 1984  
M.S., Economics, Portland State University, Portland, OR, 1972  
B.S., Planning, Portland State University, Portland, OR, 1971  
B.S., Economics, Portland State University, Portland, OR, 1970

**Current Employment:** Lookingglass Hatchery Manager, Oregon Department of Fish and Wildlife, since 1995. Responsible for oversight and supervision of all aspects of the Lower Snake River Compensation Plan spring chinook salmon production in Grande Ronde and Imnaha basins. Supervision of four permanent employees plus seasonal employees, tagging crews, and volunteers.

**Past Employment:** Lookingglass Hatchery assistant manager and acting manager, 1991-1995. Technician at Lookingglass, Willamette, and McKenzie Hatcheries, 1985-1991.

### **Richard W. Carmichael, Program Leader, 0.05 FTE**

**Education:** M.S., Fisheries Science, Oregon State University, 1984  
B.S., Fisheries Science, Oregon State University, 1979

**Current Employment:** Program Leader, Oregon Department of Fish and Wildlife, Fish Research and Development, LaGrande, 1990-present. Executive manager for northeast Oregon Fisheries Research and Development Program. Primary responsibilities are to develop and direct implementation of a complex research program to evaluate success of protecting, reestablishing, and restoring ESA listed and non-listed stocks in eastern Oregon. Oversees the work of 14 full-time fisheries biologists and up to eight projects, and represents ODFW on regional and national scientific committees. Adjunct professor at Eastern Oregon University.

**Past Employment:** Fisheries Research Biologist (Project Leader), Oregon Department of Fish and Wildlife, LaGrande, 1983-1990. Fisheries Research Biologist (Assistant Project Leader), ODFW, LaGrande, March 1983-December 1983. Project Assistant (Experimental Biology Aid), ODFW, LaGrande, 1982-1983.

## **Section 10. Information/technology transfer**

Information exchange will be essential for the success of this program. The need to obtain and share the most recent information from this and similar projects is inherent in the planning components of the program. Information will also be shared with other projects, such as Early Life History, PATH, and Genetics projects, as part of the M&E component of GRESP. Modes of information exchange will include monthly and annual reports, ESA permit reports, ESA permit applications, technical reports and manuscripts, coordination meetings among comanagers, and presentations at workshops and symposia.

## **Congratulations!**